DOCUMENT RESUME

ED 334 399 CE 058 414

TITLE	Standardized Curriculum for Service Station Retailing.
INSTITUTION	Mississippi State Dept. of Education, Jackson. Office of Vocational, Technical and Adult Education.
PUB DATE	Jun 89
NOTE	59p.; For related documents, see CE 058 387-419.
PUB TYPE	Guides - Classroom Use - Teaching Guides (For Teacher) (052)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Auto Mechanics; Behavioral Objectives; Check Lists; Competency Based Education; *Core Curriculum; Distributive Education; Educational Resources; Hand Tools; Industrial Arts; Repair; *Retailing; Secondary Education; Service Occupations; State Curriculum Guides; *State Standards; Student Evaluation; Teaching Methods; Trade and Industrial Education; Vocational Education
IDENTIFIERS	*Mississippi; *Service Station Operators

ABSTRACT

This curriculum guide for service station retailing was developed by the state of Mississippi to standardize vocational education course titles and core contents. The objectives contained in this document are common to all service station retailing programs in the state. The guide contains objectives for service station retailing I and II courses. Units in course I cover the following topics: orientation; safety; hand tools; fundamentals of the gasoline engine; cooling system; the lubrication system; the automotive brake system; the automotive fuel system; the automotive ignition system; the automotive clutch; and wheels and tires. Units in course II cover orientation; fundamentals of the gasoline engine; cooling system; the lubricating system; the automotive brake system; the automotive fuel system; the automotive ignition system; cranking motors and generators; air conditioning service; the automotive clutch; universal joint replacement; and valve mechanisms. Each unit consists of these components: objectives, with core/essential objectives indicated; suggested instructional practices; list of suggested resources; list of evaluation and suggested minimum performance standards, with core/essential objectives indicated; and performance record, with core/essential objectives indicated. A checklist for each course combining all unit performance standards into a single list is included. (KC)

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STANDARDIZED CURRICULUM

FOR

SERVICE STATION RETAILING

MISSISSIPPI DEPARTMENT OF EDUCATION

OFFICE OF VOCATIONAL, TECHNICAL

AND ADULT EDUCATION

June 1989

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Published by the:

Office of Vocational, Technical and Adult Education
Mississippi State Department of Education
Jackson, Mississippi

and

Research and Curriculum Unit for Vocational, Technical and Adult Education
College of Education
Mississippi State University
Mississippi State, Mississippi

1989

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FOREWORD

This volume is intended to be used in the State of Mississippi as a mechanism for standardizing vocational education course titles and core contents. The need for standardization of curricula was triggered by provisions in the Educational Reform Act of 1982 which mandated:

-- elimination of nearly all currently existing curriculum requirements and development of new curriculum content that is "properly sequenced" and "coordinated";

-- steps to ensure that students master one level of course work before being advanced to the next level and that progression is properly sequenced;

-- a criterion-referenced, state-wide testing program that is built upon an identified set of "basic skills" keyed to student performance in grades 3, 5, 8, and 11;

-- revised graduation requirements that take into account student performance on the basic skills and also on a test of "functional literacy skills"; and

-- a system of accrediting schools that takes into account the performance of districts, schools, and students.

In addition to the mandates of the Educational Reform Act, the Strategic Plan for Vocational and Technical Education in Mississippi also calls for improving the quality of vocational and technical education through the standardization of curricula and the articulation of secondary and postsecondary programs.

Both of these mandates were further reinforced by legislation passed in 1986 which called for the establishment of state-wide "guidelines and procedures for managing an instructional program in the public schools." This legislation calls for instructional management plans containing the following components:

1. a written list of learning objectives for every course for which academic credit is given on students' transcripts (state specified core objectives must be included);

2. suggested instructional practices and resources for the learning objectives;

3. standards for student performance for each learning objective; and

4. systematic procedures for evaluating student performance on the learning objectives.

Specific local district actions regarding the state-wide instructional management plan are also required, namely:

1. The objectives contained in this document are common to all programs in the state. Core objectives are designated with an asterisk. The local district is encouraged to add additional objectives to this listing to meet local needs of students and employers.

2. The local school board must officially adopt the learning objectives as the district's curricula.

3. Pass/fail policies must be based on mastery of learning objectives.

4. Student performance on the learning objectives must be systematically evaluated at least once during the school year.

5. During the school year, records of individual student performance must indicate whether or not the objectives have been mastered. The record must indicate mastery status for each of the objectives tested in the Basic Skills Assessment Program (including functional literacy skills) and must be permanently maintained on all students who do <u>not</u> master the basic and functional literacy skills prior to being tested on them.

6. Each year, information about student performance on learning objectives must be reviewed. Those objectives which students are not mastering must be identified, and a plan must be developed for improving student performance on those objectives.

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SERVICE STATION RETAILING I

Developed by

William Smith, Hinds Community College, Vicksburg-Warren County Center

SERVICE STATION RETAILING I

Unit No.	Title
1	Orientation
2	Safety
3	Hand Tools
4	Fundamentals of the Gasoline Engine
5	Cooling System
6	The Lubrication System
7	The Automotive Brake System
8	The Automotive Fuel System
9	The Automotive Ignition System
10	The Automotive Clutch
11	Wheels and Tires

COURSE: Service Station Retailing I

Unit 1: Orientation

Objectives: Upon completion of this unit, the student will:

*1. List rules of the secondary code of conduct.
*2. Describe areas studied in service station retailing.
3. Define grading method.
*4. List rules to follow while in the shop area.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion

Suggested Resources:

Primary Source: Hinds Community College High School Student Handbook. Vicksburg-Warren County Branch. 1988.

Additional Source: Hinds Community College Service Station Retailing Course Syllabus.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list ten rules of the secondary code of conduct.
*Objective 2: The student will describe four areas of service station retailing.
Objective 3: The student will define the grading method used by the service station retailing teacher.
*Objective 4: The student will list six rules to follow while in the shop area.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

___*1. Listed rules of the secondary code of conduct.
___*2. Described areas of service station retailing.
___ 3. Defined the grading method used by the service station retailing teacher.
___*4. Listed rules to follow while in the shop area.

*Indicates core/essential objectives

COURSE: Service Station Retailing I

Unit 2: Safety

Objectives: Upon completion of this unit, the student will:

*1. Describe a proper attitude to insure safety.
2. Define dismissal safety.
*3. List various items of protective clothing.
*4. List rules to follow when using hand tools.
*5. List rules to follow when using a hammer.
*6. List rules to follow when using a screwdriver.
*7. List rules to follow when using wrenches.
*8. List rules to follow when using chisels.
*9. List rules to follow when using files.
*10. List rules to follow when using hacksaws.

*Indicates core\essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Demonstration

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will describe a proper attitude to insure safety.
Objective 2: The student will define dismissal safety.
*Objective 3: The student will list various items of protective clothing.
*Objective 4: The student will list rules to follow when using hand tools.
*Objective 5: The student will list rules to follow when using a hammer.
*Objective 6: The student will list rules to follow when using a screwdriver.

*Objective 7: The student will list rules to follow when using wrenches.
*Objective 8: The student will list rules to follow when using chisels.
*Objective 9: The student will list rules to follow when using files.
*Objective 10: The student will list rules to follow when using hacksaws.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ *1. Described a proper attitude to insure safety.
____ 2. Defined dismissal safety.
____ *3. Listed various items of protective clothing.
____ *4. Listed rules to follow when using hand tools.
____ *5. Listed rules to follow when using a hammer.
____ *6. Listed rules to follow when using a screwdriver.
____ *7. Listed rules to follow when using wrenches.
____ *8. Listed rules to follow when using chisels.
____ *9. Listed rules to follow when using files.
____ *10. Listed rules to follow when using hacksaws.

*Indicates core/essential objectives

COURSE: Service Station Retailing I

Unit 3: Hand Tools

Objectives: Upon completion of this unit, the student will:

*1. List the different types of wrenches.
2. Describe various functions of screwdrivers.
*3. Demonstrate different uses of hand tools.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list different types of wrenches.
Objective 2: The student will describe various functions of screwdrivers.
*Objective 3: The student will demonstrate different uses of hand tools.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Listed the different types of wrenches.
____ 2. Described various functions of screwdrivers.
____*3. Demonstrated different uses of hand tools.

*Indicates core/essential objectives

COURSE: Service Station Retailing I

Unit 4: Fundamentals of the Gasoline Engine

Objectives: Upon completion of this unit, the student will:

1. Explain the difference between an internal and external combustion chamber.
*2. State the purpose of the fuel pump.
*3. List the principal parts of the ignition system.
*4. List the parts of the lubricating system.
*5. Describe the function of the cooling system.
6. Name the parts of a cylinder block.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

Objective 1: The student will explain the difference between an internal and external combustion chamber.
*Objective 2: The student will state the purpose of the fuel pump.
*Objective 3: The student will list the four principal parts of the ignition system.
*Objective 4: The student will list the four parts of the lubricating system.
*Objective 5: The student will describe the function of the cooling system.
Objective 6: The student will name the four parts of a cylinder block.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ 1. Explained the difference between an internal and external combustion chamber.
____*2. Stated the purpose of the fuel pump.
____*3. Listed the principal parts of the ignition system.
____*4. Listed the parts of the lubricating system.
____*5. Described the function of the cooling system.
____ 6. Named the parts of a cylinder block.

*Indicates core/essential objectives

COURSE: Service Station Retailing I

Unit 5: Cooling System

Objectives: Upon completion of this unit, the student will:

*1. List ways heat is transferred.
2. Name types of cooling systems.
*3. List parts of a cooling system.
*4. Describe the commonly used antifreeze agents.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list three ways heat is transferred.
Objective 2: The student will name two types of cooling systems.
*Objective 3: The student will list three parts of a cooling system.
*Objective 4: The student will describe the two commonly used antifreeze agents.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Listed ways heat is transferred.
____ 2. Named types of cooling systems.
____*3. Listed parts of a cooling system.
____*4. Described the commonly used antifreeze agents.

*Indicates core/essential objectives

COURSE: Service Station Retailing I

Unit 6: The Lubrication System

Objectives: Upon completion of this unit, the student will:

1. Define fluid friction.
2. Define sliding friction.
*3. List types of lubricating systems.
*4. List types of oil.
*5. Name common abrasive particles found in the oil of automobile engines.
*6. List types of oil filters.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

Objective 1: The student will define fluid friction.
Objective 2: The student will define sliding friction.
*Objective 3: The student will list two types of lubricating systems.
*Objective 4: The student will list four types of oil.
*Objective 5: The student will name three common abrasive particles found in the oil of automobile engines.
*Objective 6: The student will list two types of oil filters.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ 1. Defined fluid friction.
____ 2. Defined sliding friction.
____ *3. Listed types of lubricating systems.
____ *4. Listed types of oil.
____ *5. Named common abrasive particles found in the oil of automobile engines.
____ *6. Listed types of oil filters.

*Indicates core/essential objectives

COURSE: Service Station Retailing I

Unit 7: The Automotive Brake System

Objectives: Upon completion of this unit, the student will:

*1. Describe the function of hydraulic brakes.
*2. List parts of drum-type brakes.
*3. List parts of disc brake assembly.
*4. Name elements of power brakes.
5. Name forms of parking brakes.
6. Describe the procedure to follow when bleeding hydraulic brakes.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will describe the function of hydraulic brakes.
*Objective 2: The student will list three parts of drum-type brakes.
*Objective 3: The student will list four parts of disc brake assembly.
*Objective 4: The student will name three elements of power brakes.
Objective 5: The student will name three forms of parking brakes.
Objective 6: The student will describe the procedure to follow when bleeding hydraulic brakes.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Described the function of hydraulic brakes.
____*2. Listed parts of drum-type brakes.
____*3. Listed parts of disc brake assembly.
____*4. Named elements of power brakes.
____ 5. Named forms of parking brakes.
____ 6. Described the procedure to follow when bleeding hydraulic brakes.

*Indicates core/essential objectives

COURSE: Service Station Retailing I

Unit 8: The Automotive Fuel System

Objectives: Upon completion of this unit, the student will:

*1. Explain the purpose of the fuel system.
*2. List parts of the fuel pump.
*3. List circuits of the carburetor.
*4. Describe where liquid gasoline is vaporized.
5. Describe the ideal fuel mixture.
6. Describe the function of superchargers.
*7. List causes of vapor locks.
*8. List purposes of air cleaners.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will explain the purpose of the fuel system.
*Objective 2: The student will list four parts of the fuel pump.
*Objective 3: The student will list three circuits of the carburetor.
*Objective 4: The student will describe where liquid gasoline is vaporized.
Objective 5: The student will describe the ideal fuel mixture.
Objective 6: The student will describe one function of superchargers.

*Objective 7: The student will list two causes of vapor locks.
*Objective 8: The student will list two purposes of air cleaners.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Explained the purpose of the fuel system.
____*2. Listed parts of the fuel pump.
____*3. Listed circuits of the carburetor.
____*4. Described where liquid gasoline is vaporized.
____ 5. Described the ideal fuel mixture.
____ 6. Described the function of superchargers.
____*7. Listed causes of vapor locks.
____*8. Listed purposes of air cleaners.

*Indicates core/essential objectives

COURSE: Service Station Retailing I

Unit 9: The Automotive Ignition System

Objectives: Upon completion of this unit, the student will:

*1. List parts of the ignition system.
*2. List parts of the ignition coil.
*3. List functions of automotive resistors.
*4. Name parts of the ignition distributors.
5. Describe the function of the automatic advance mechanism.
7. List parts of the spark plug.
8. Describe how the temperature of a spark plug is controlled.
*9. List types of transistor ignition systems.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list four parts of the ignition system.
*Objective 2: The student will list two parts of the ignition coil.
*Objective 3: The student will list two functions of automotive resistors.
*Objective 4: The student will name four parts of the ignition distributors.
Objective 5: The student will describe one function of the automatic advance mechanism.
Objective 7: The student will list three parts of the spark plug.
Objective 8: The student will describe how the temperature of a spark plug is controlled.

*Objective 9: The student will list two types of transistor ignition systems.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Listed parts of the ignition system.
____*2. Listed parts of the ignition coil.
____*3. Listed functions of automotive resistors.
____*4. Named parts of the ignition distributors.
____ 5. Described the function of the automatic advance mechanism.
____ 7. Listed parts of the spark plug.
____ 8. Described how the temperature of a spark plug is controlled.
____*9. Listed types of transistor ignition systems.

*Indicates core/essential objectives

COURSE: Service Station Retailing I

Unit 10: The Automotive Clutch

Objectives: Upon completion of this unit, the student will:

*1. List parts of the clutch.
2. List usual service jobs performed on the clutch.
*3. Describe the procedure to follow when adjusting a clutch pedal.
*4. Describe the procedure to follow when testing for clutch slippage.

*Indicates core essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list four parts of the clutch.
Objective 2: The student will list two usual service jobs performed on the clutch.
*Objective 3: The student will describe the procedure to follow when adjusting a clutch pedal.
*Objective 4: The student will describe the procedure to follow when testing for clutch slippage.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

___*1. Listed parts of the clutch.
___ 2. Listed usual service jobs performed on the clutch.

____*3. Described the procedure to follow when adjusting a clutch pedal.

____*4. Described the procedure to follow when testing for clutch slippage.

*Indicates core/essential objectives

COURSE: Service Station Retailing I

Unit 11: Wheels and Tires

Objectives: Upon completion of this unit, the student will:

*1. List parts of the tire.
*2. List parts of the rim.
3. List advantages of wide tires.
*4. List advantages of radial tires.
*5. Name tools required to balance automotive wheels.
*6. Describe how to determine whether the front wheels are properly aligned.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list three parts of the tire.
*Objective 2: The student will list three parts of the rim.
Objective 3: The student will list two advantages of wide tires.
*Objective 4: The student will list two advantages of radial tires.
*Objective 5: The student will name three tools required to balance automotive wheels.
*Objective 6: The student will describe how to determine whether the front wheels are properly aligned.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Listed parts of the tire.
____*2. Listed parts of the rim.
____ 3. Listed advantages of wide tires.
____*4. Listed advantages of radial tires.
____*5. Named tools required to balance automotive wheels.
____*6. Described how to determine whether the front wheels are properly aligned.

*Indicates core/essential objectives

SERVICE STATION RETAILING II

Developed by

William Smith, Hinds Community College, Vicksburg-Warren County Center

SERVICE STATION RETAILING II

Unit No.	Title
1	Orientation
2	Fundamentals of the Gasoline Engine
3	Cooling System
4	The Lubricating System
5	The Automotive Brake System
6	The Automotive Fuel System
7	The Automotive Ignition System
8	Cranking Motors and Generators
9	Air Conditioning Service
10	The Automotive Clutch
11	Universal Joint Replacement
12	Valve Mechanisms

COURSE: Service Station Retailing II

Unit 1: Orientation

Objectives: Upon completion of this unit, the student will:

*1. List rules of the secondary code of conduct.
*2. Describe areas studied in service station retailing.
3. Define grading method.
*4. List rules to follow while in the shop area.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion

Suggested Resources:

Primary Source: Hinds Community College High School Student Handbook. Vicksburg-Warren County Branch. 1988.

Additional Source: Hinds Community College Service Station Retailing Course Syllabus.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list ten rules of the secondary code of conduct.
*Objective 2: The student will describe four areas of service station retailing.
Objective 3: The student will define the grading method used by the service station retailing teacher.
*Objective 4: The student will list six rules to follow while in the shop area.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Listed rules of the secondary code of conduct.
____*2. Described areas of service station retailing.
____ 3. Defined the grading method used by the service station retailing teacher.
____*4. Listed rules to follow while in the shop area.

*Indicates core/essential objectives

COURSE: Service Station Retailing II

Unit 2: Fundamentals of the Gasoline Engine

Objectives: Upon completion of this unit, the student will:

1. Describe a cylinder head.
2. Name the part to which the intake manifold fastens.
*3. State the main purpose of the intake manifold.
*4. State the main purpose of the exhaust manifold.
*5. Describe the method used to determine whether the exhaust gasket leaks.
*6. State the procedure to follow when replacing a manifold gasket.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

Objective 1: The student will describe a cylinder head.
Objective 2: The student will name the part to which the intake manifold fastens.
*Objective 3: The student will state the main purpose of the intake manifold.
*Objective 4: The student will state the main purpose of the exhaust manifold.
*Objective 5: The student will describe the method used to determine whether the exhaust gasket leaks.
*Objective 6: The student will state the procedure to follow when replacing a manifold gasket.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ 1. Described a cylinder head.
____ 2. Named the part to which the intake manifold fastens.
____ *3. Stated the main purpose of the intake manifold.
____ *4. Stated the main purpose of the exhaust manifold.
____ *5. Described the method used to determine whether the exhaust gasket leaks.
____ *6. Stated the procedure to follow when replacing a manifold gasket.

*Indicates core/essential objectives

COURSE: Service Station Retailing II

Unit 3: Cooling System

Objectives: Upon completion of this unit, the student will:

*1. State the procedure to follow when troubleshooting a defective head gasket.
2. State the procedure to follow when replacing a fan belt.
3. State the procedure to follow when reverse flushing a radiator.
*4. State the procedure to follow when testing and replacing a thermostat.
*5. State the procedure to follow when repairing a water pump.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will state the procedure to follow when troubleshooting a defective head gasket.
Objective 2: The student will state the procedure to follow when replacing a fan belt.
Objective 3: The student will state the procedure to follow when reverse flushing a radiator.
*Objective 4: The student will state the procedure to follow when testing and replacing a thermostat.
*Objective 5: The student will state the procedure to follow when repairing a water pump.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Stated the procedure to follow when troubleshooting a defective head gasket.
____ 2. Stated the procedure to follow when replacing a fan belt.
____ 3. Stated the procedure to follow when reverse flushing a radiator.
____*4. Stated the procedure to follow when testing and replacing a thermostat.
____*5. Stated the procedure to follow when repairing a water pump.

*Indicates core/essential objectives

COURSE: Service Station Retailing II

Unit 4: The Lubricating System

Objectives: Upon completion of this unit, the student will:

*1. Describe the procedure used when troubleshooting for low oil pressure.
*2. State the procedure to follow when changing engine oil.
3. List the tools needed when replacing an oil pan gasket.
*4. Name the steps to follow when replacing the oil pan gasket.
5. List the tools and supplies needed when lubricating the engine unit.
*6. State the procedure to follow when lubricating the engine unit.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will describe the procedure used when troubleshooting for low oil pressure.
*Objective 2: The student will state the procedure to follow when changing engine oil.
Objective 3: The student will list three tools needed when replacing an oil pan gasket.
*Objective 4: The student will name three steps to follow when replacing the oil pan gasket.
Objective 5: The student will list two tools and three supplies needed when lubricating the engine unit.

*Objective 6: The student will state the procedure to follow when lubricating the engine unit.

*Indicates core essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Described the procedure used when troubleshooting for low oil pressure.
____*2. Stated the procedure to follow when changing engine oil.
____ 3. Listed the tools needed when replacing an oil pan gasket.
____*4. Named the steps to follow when replacing the oil pan gasket.
____ 5. Listed the tools and supplies needed when lubricating the engine unit.
____*6. Stated the procedure to follow when lubricating the engine unit.

*Indicates core/essential objectives

COURSE: Service Station Retailing II

Unit 5: The Automotive Brake System

Objectives: Upon completion of this unit, the student will:

1. List the tools needed to adjust the brakes on an automobile.
*2. State the procedure to follow when troubleshooting the brakes.
3. List the reason it is best to use two wrenches on brake lines.
*4. Name the steps to follow when making a minor brake adjustment.
*5. State the procedure to follow when servicing disc brakes.
*6. List piston type brake service procedures.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

Objective 1: The student will list three tools needed to adjust the brakes on an automobile.
*Objective 2: The student will state the procedure to follow when troubleshooting the brakes.
Objective 3: The student will list one reason it is best to use two wrenches on brake lines.
*Objective 4: The student will name the steps to follow when making a minor brake adjustment.
*Objective 5: The student will state the procedure to follow when servicing disc brakes.
*Objective 6: The student will list four piston type brake service procedures.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ 1. Listed the tools needed to adjust the brakes on an automobile.
____*2. Stated the procedure to follow when troubleshooting the brakes.
____ 3. Listed the reason it is best to use two wrenches on brake lines.
____*4. Named the steps to follow when making a minor brake adjustment.
____*5. Stated the procedure to follow when servicing disc brakes.
____*6. Listed piston type brake service procedures.

*Indicates core/essential objectives

COURSE: Service Station Retailing II

Unit 6: The Automotive Fuel System

Objectives: Upon completion of this unit, the student will:

*1. Describe the procedure used to troubleshoot the fuel system.
*2. List the steps to follow when disassembling a Ford six cylinder carburetor.
3. List the steps to follow when assembling a Ford six carburetor.
*4. Name the steps to follow when dissassembling a 4MV/4MC carburetor.
5. State the procedure to follow assembling a 4MV/4MC carburetor.
*6. State the difference between a BBS and BBD carburetor.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will describe the procedure used to troubleshoot the fuel system.
*Objective 2: The student will list five steps to follow when disassembling a Ford six cylinder carburetor.
Objective 3: The student will list five steps to follow when assembling a Ford six cylinder carburetor.
*Objective 4: The student will name five steps to follow when disassembling a 4MV/4MC carburetor.
Objective 5: The student will state the procedure to follow assembling a 4MV/4MC carburetor.

*Objective 6: The student will state the difference between a BBS and BBD carburetor.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Described the procedure used to troubleshoot the fuel system.
____*2. Listed the steps to follow when disassembling a Ford six cylinder carburetor.
____ 3. Listed the steps to follow when assembling a Ford six carburetor.
____*4. Named the steps to follow when dissassembling a 4MV/4MC carburetor.
____ 5. Stated the procedure to follow assembling a 4MV/4MC carburetor.
____*6. Stated the difference between a BBS and BBD carburetor.

*Indicates core/essential objectives

COURSE: Service Station Retailing II

Unit 7: The Automotive Ignition System

Objectives: Upon completion of this unit, the student will:

*1. List functions of the ignition system.
2. Name parts that make up the ignition coil.
3. State the purpose of the ignition condenser.
*4. List parts of the distributor.
*5. State the purpose of the spark plug.
*6. List ways of determining whether a spark plug is operating too cold.
*7. List ways of determining whether a spark plug is operating too hot.
*8. List operating conditions which indicate an engine needs a tune-up.
*9. State service procedures of which an engine tune-up consists.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list four functions of the ignition system.
Objective 2: The student will name three parts that make up the ignition coil.
Objective 3: The student will state one purpose of the ignition condenser.
*Objective 4: The student will list five parts of the distributor.
*Objective 5: The student will state one purpose of the spark plug.

*Objective 6: The student will list two ways of determining whether a spark plug is operating too cold.

*Objective 7: The student will list two ways of determining whether a spark plug is operating too hot.

*Objective 8: The student will list three operating conditions which indicate an engine needs a tune-up.

*Objective 9: The student will state service procedures of which an engine tune-up consists.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Listed functions of the ignition system.
____ 2. Named parts that make up the ignition coil.
____ 3. Stated the purpose of the ignition condenser.
____*4. Listed parts of the distributor.
____*5. Stated the purpose of the spark plug.
____*6. Listed ways of determining whether a spark plug is operating too cold.
____*7. Listed ways of determining whether a spark plug is operating too hot.
____*8. Listed operating conditions which indicate an engine needs a tune-up.
____*9. Stated service procedures of which an engine tune-up consists.

*Indicates core/essential objectives

COURSE: Service Station Retailing II

Unit 8: Cranking Motors and Generators

Objectives: Upon completion of this unit, the student will:

*1. List essential parts in the cranking motor.
*2. List procedure to follow when repairing the cranking motor.
3. State the difference between alternating and direct current.
*4. List conditions which indicate the cranking motor needs service.
5. List instruments necessary to troubleshoot the cranking motor.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list four essential parts in the cranking motor.
*Objective 2: The student will list five procedures to follow when repairing the cranking motor.
Objective 3: The student will state one difference between alternating and direct current.
*Objective 4: The student will list three conditions which indicate the cranking motor needs service.
Objective 5: The student will list four instruments necessary to troubleshoot the cranking motor.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Listed essential parts in the cranking motor.
____*2. Listed procedure to follow when repairing the cranking motor.
____ 3. Stated the difference between alternating and direct current.
____*4. Listed conditions which indicate the cranking motor needs service.
____ 5. Listed instruments necessary to troubleshoot the cranking motor.

*Indicates core/essential objectives

COURSE: Service Station Retailing II

Unit 9: Air Conditioning Service

Objectives: Upon completion of this unit, the student will:

*1. List essential equipment for discharging a system.
2. List steps to follow when flushing a system.
*3. List the equipment needed to evacuate a system.
*4. Name the steps to follow when evacuating a system.
*5. State the procedure to follow when adding refrigerant.
6. State when conditions indicate the oil should be checked in a system.
*7. List steps to follow when adding oil to a system.

*Indicates core essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Allen, Paul M. Mechanic's Automotive Airconditioning Repair Manual. Educational and Technical Services Division: Draf Industries, Inc. 1983.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list essential equipment for discharging a system.
Objective 2: The student will list five steps to follow when flushing a system.
*Objective 3: The student will list the equipment needed to evacuate a system.
*Objective 4: The student will name six steps to follow when evacuating a system.
*Objective 5: The student will state the procedure to follow when adding refrigerant.
Objective 6: The student will state five conditions indicate the oil should be checked in a system.
*Objective 7: The student will list five steps to follow when adding oil to a system.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Listed essential equipment for discharging a system.
____ 2. Listed steps to follow when flushing a system.
____*3. Listed the equipment needed to evacuate a system.
____*4. Named the steps to follow when evacuating a system.
____*5. Stated the procedure to follow when adding refrigerant.
____ 6. Stated when conditions indicate the oil should be checked in a system.
____*7. Listed steps to follow when adding oil to a system.

*Indicates core/essential objectives

COURSE: Service Station Retailing II

Unit 10: The Automotive Clutch

Objectives: Upon completion of this unit, the student will:

*1. State the purpose of the series of coil springs arranged in a circular fashion around the hub of the driven disc.
2. State the purpose of the weight at the outer end of some throwout levers.
*3. List steps to follow when adjusting a clutch.
*4. List steps to follow when rebuilding a clutch.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will state one purpose of the series of coil springs arranged in a circular fashion around the hub of the driven disc.
Objective 2: The student will state one purpose of the weight at the outer end of some throwout levers.
*Objective 3: The student will list six steps to follow when adjusting a clutch.
*Objective 4: The student will list six steps to follow when rebuilding a clutch.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Stated the purpose of the series of coil springs arranged in a circular fashion around the hub of the driven disc.
____ 2. Stated the purpose of the weight at the outer end of some throwout levers.
____*3. Listed steps to follow when adjusting a clutch.
____*4. Listed steps to follow when rebuilding a clutch.

*Indicates core/essential objectives

COURSE: Service Station Retailing II

Unit 11: Universal Joint Replacement

Objectives: Upon completion of this unit, the student will:

*1. List the steps to follow when removing the drive shaft.
*2. List the steps to follow when removing the u-joint.
3. List steps to follow when cleaning and inspecting a universal joint.
*4. List steps to follow when assembling a u-joint.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list three steps to follow when removing the drive shaft.
*Objective 2: The student will list three steps to follow when removing the u-joint.
Objective 3: The student will list five steps to follow when cleaning and inspecting a universal joint.
*Objective 4: The student will list five steps to follow when assembling a u-joint.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

___*1. Listed the steps to follow when removing the drive shaft.
___*2. Listed the steps to follow when removing the u-joint.

____ 3. Listed steps to follow when cleaning and inspecting a universal joint.

____*4. List steps to follow when assembling a u-joint.

*Indicates core/essential objectives

COURSE: Service Station Retailing II

Unit 12: Valve Mechanisms

Objectives: Upon completion of this unit, the student will:

*1. List the steps to follow when troubleshooting the valve system.
*2. State procedure to follow when removing valves.
*3. State procedure to follow when replacing valves.
4. Describe the process involved with replacing valve seats.
5. List parts of a hydraulic valve lifter.
*6. State the purpose of valve clearance.

*Indicates core/essential objectives

Suggested Instructional Procedures:

Lecture - discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Source: Glen, Harold J. Auto Mechanics. 3rd ed. Peoria, Illinois: Chas. A. Bennett Co., Inc., 1976.

Additional Source: Usoro, Hogan (developer). Vocational Preparation Curriculum: Auto Service. Columbia: University of Missouri - Columbia, 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list six steps to follow when troubleshooting the valve system.
*Objective 2: The student will state procedure to follow when removing valves.
*Objective 3: The student will state procedure to follow when replacing valves.
Objective 4: The student will describe the process involved with replacing valve seats.
Objective 5: The student will list six parts of a hydraulic valve lifter.
*Objective 6: The student will state the purpose of valve clearance.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____*1. Listed the steps to follow when troubleshooting the valve system.
____*2. Stated procedure to follow when removing valves.
____*3. Stated procedure to follow when replacing valves.
____ 4. Described the process involved with replacing valve seats.
____ 5. Listed parts of a hydraulic valve lifter.
____*6. Stated the purpose of valve clearance.

*Indicates core/essential objectives

STUDENT PERFORMANCE RECORD

SERVICE STATION RETAILING

SERVICE STATION RETAILING I

Student: _____

This record is provided as an alternative to the student performance records at the end of each unit. It can be duplicated for each student and serve as a cumulative record of competencies achieved in the course.

Place a check by each objective the student achieved; you may wish to note the date that the student achieved the objective.

C = Core competencies

____ C1. Listed rules of the secondary code of conduct.
____ C2. Described areas of service station retailing.
____ 3. Defined the grading method used by the service station retailing teacher.
____ C4. Listed rules to follow while in the shop area.
____ C5. Described a proper attitude to insure safety.
____ 6. Defined dismissal safety.
____ C7. Listed various items of protective clothing.
____ C8. Listed rules to follow when using hand tools.
____ C9. Listed rules to follow when using a hammer.
____ C10. Listed rules to follow when using a screwdriver.
____ C11. Listed rules to follow when using wrenches.
____ C12. Listed rules to follow when using chisels.
____ C13. Listed rules to follow when using files.
____ C14. Listed rules to follow when using hacksaws.
____ C15. Listed the different types of wrenches.
____ 16. Described various functions of screwdrivers.
____ C17. Demonstrated different uses of hand tools.
____ 18. Explained the difference between an internal and external combustion chamber.
____ C19. Stated the purpose of the fuel pump.
____ C20. Listed the principal parts of the ignition system.
____ C21. Listed the parts of the lubricating system.
____ C22. Described the function of the cooling system.
____ 23. Named the parts of a cylinder block.
____ C24. Listed ways heat is transferred.
____ 25. Named types of cooling systems.
____ C26. Listed parts of a cooling system.
____ C27. Described the commonly used antifreeze agents.
____ 28. Defined fluid friction.
____ 29. Defined sliding friction.
____ C30. Listed types of lubricating systems.
____ C31. Listed types of oil.
____ C32. Named common abrasive particles found in the oil of automobile engines.

____C33. Listed types of oil filters.
____C34. Described the function of hydraulic brakes.
____C35. Listed parts of drum-type brakes.
____C36. Listed parts of disc brake assembly.
____C37. Named elements of power brakes.
____ 38. Named forms of parking brakes.
____ 39. Described the procedure to follow when bleeding hydraulic brakes.
____C40. Explained the purpose of the fuel system.
____C41. Listed parts of the fuel pump.
____C42. Listed circuits of the carburetor.
____C43. Described where liquid gasoline is vaporized.
____ 44. Described the ideal fuel mixture.
____ 45. Described the function of superchargers.
____C46. Listed causes of vapor locks.
____C47. Listed purposes of air cleaners.
____C48. Listed parts of the ignition system.
____C49. Listed parts of the ignition coil.
____C50. Listed functions of automotive resistors.
____C51. Named parts of the ignition distributors.
____ 52. Described the function of the automatic advance mechanism.
____ 53. Listed parts of the spark plug.
____ 54. Described how the temperature of a spark plug is controlled.
____C55. Listed types of transistor ignition systems.
____C56. Listed parts of the clutch.
____ 57. Listed usual service jobs performed on the clutch.
____C58. Described the procedure to follow when adjusting a clutch pedal.
____C59. Described the procedure to follow when testing for clutch slippage.
____C60. Listed parts of the tire.
____C61. Listed parts of the rim.
____ 62. Listed advantages of wide tires.
____C63. Listed advantages of radial tires.
____C64. Named tools required to balance automotive wheels.
____C65. Described how to determine whether the front wheels are properly aligned.

SERVICE STATION RETAILING II

Student: _____

This record is provided as an alternative to the student performance records at the end of each unit. It can be duplicated for each student and serve as a cumulative record of competencies achieved in the course.

Place a check by each objective the student achieved; you may wish to note the date that the student achieved the objective.

C = Core competencies

____ C1. Listed rules of the secondary code of conduct.
____ C2. Described areas studied in service station retailing.
____ 3. Defined grading method.
____ C4. Listed rules to follow while in the shop area.
____ 5. Described a cylinder head.
____ 6. Named the part to which the intake manifold fastens.
____ C7. Stated the main purpose of the intake manifold.
____ C8. Stated the main purpose of the exhaust manifold.
____ C9. Described the method used to determine whether the exhaust gasket leaks.
____C10. Stated the procedure to follow when replacing a manifold gasket.
____C11. Stated the procedure to follow when troubleshooting a defective head gasket.
____ 12. Stated the procedure to follow when replacing a fan belt.
____ 13. Stated the procedure to follow when reverse flushing radiator.
____C14. Stated the procedure to follow when testing and replacing a thermostat.
____C15. Stated the procedure to follow when repairing a water pump.
____C16. Described the procedure used when troubleshooting for low oil pressure.
____C17. Stated the procedure to follow when changing engine oil.
____ 18. Listed the tools needed when replacing an oil pan gasket.
____C19. Named the steps to follow when replacing the oil pan gasket.
____ 20. Listed the tools and supplies needed when lubricating the engine unit.
____C21. Stated the procedure to follow when lubricating the engine unit.
____ 22. Listed the tools needed to adjust the brakes on an automobile.
____C23. Stated the procedure to follow when troubleshooting the brakes.

____ 24. Listed the reason it is best to use two wrenches on brake lines.
____C25. Named the steps to follow when making a minor brake adjustment.
____C26. Stated the procedure to follow when servicing disc brakes.
____C27. Listed piston type brake service procedures.
____C28. Described the procedure used to troubleshoot the fuel system.
____C29. Listed the steps to follow when disassembling a Ford six cylinder carburetor.
____ 30. Listed the steps to follow when assembling a Ford six carburetor.
____C31. Named the steps to follow when dissassembling a 4MV/4MC carburetor.
____ 32. Stated the procedure to follow assembling a 4MV/4MC carburetor.
____C33. Stated the difference between a BBS and BBD carburetor.
____C34. Listed functions of the ignition system.
____ 35. Named parts that make up the ignition coil.
____ 36. Stated the purpose of the ignition condenser.
____C37. Listed parts of the distributor.
____C38. Stated the purpose of the spark plug.
____C39. Listed ways of determining whether a spark plug is operating too cold.
____C40. Listed ways of determining whether a spark plug is operating too hot.
____C41. Listed operating conditions which indicate an engine needs a tune-up.
____C42. Stated service procedures of which an engine tune-up consists.
____C43. Listed essential parts in the cranking motor.
____C44. Listed procedure to follow when repairing the cranking motor.
____ 45. Stated the difference between alternating and direct current.
____C46. Listed conditions which indicate the cranking motor needs service.
____ 47. Listed instruments necessary to troubleshoot the cranking motor.
____C48. Listed essential equipment for discharging a system.
____ 49. Listed steps to follow when flushing a system.
____C50. Listed the equipment needed to evacuate a system.
____C51. Named the steps to follow when evacuating a system.
____C52. Stated the procedure to follow when adding refrigerant.
____ 53. Stated when conditions indicate the oil should be checked in a system.
____C54. Listed steps to follow when adding oil to a system.

____C55. Stated the purpose of the series of coil springs arranged in a circular fashion around the hub of the driven disc.
____ 56. Stated the purpose of the weight at the outer end of some throwout levers.
____C57. Listed steps to follow when adjusting a clutch.
____C58. Listed steps to follow when rebuilding a clutch.
____C59. Listed the steps to follow when removing the drive shaft.
____C60. Listed the steps to follow when removing the u-joint.
____C61. Listed steps to follow when cleaning and inspecting a universal joint.
____C62. Listed steps to follow when assemblying a u-joint.
____C63. Listed the steps to follow when troubleshooting the valve system.
____C64. Stated procedure to follow when removing valves.
____C65. Stated procedure to follow when replacing valves.
____ 66. Described the process involved with replacing valve seats.
____ 67. Listed parts of a hydraulic valve lifter.
____C68. Stated the purpose of valve clearance.
____C69. Listed the steps to follow when troubleshooting the valve system.
____C70. Stated procedure to follow when removing valves.
____C71. Stated procedure to follow when replacing valves.
____ 72. Described the process involved with replacing valve seats.
____ 73. Listed parts of a hydraulic valve lifter.
____C74. Stated the purpose of valve clearance.